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W. H. PRIDGEN.

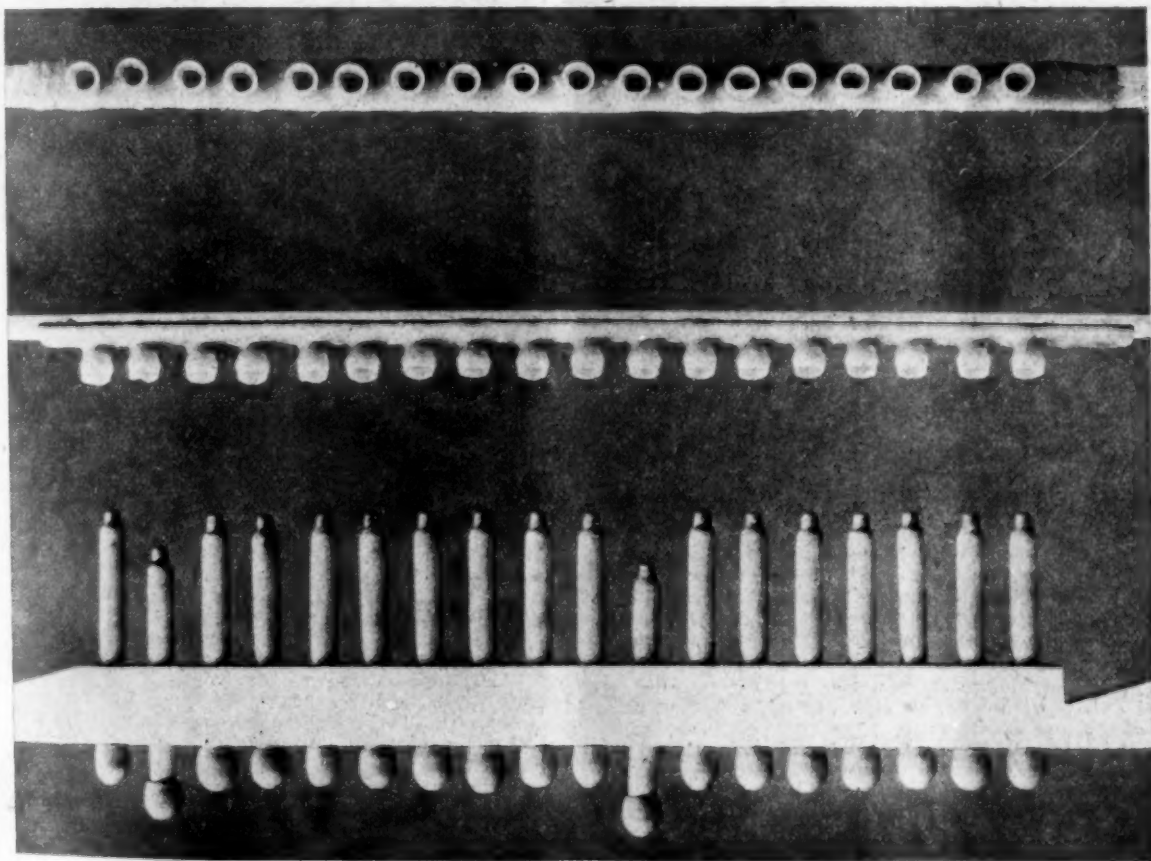
[This Prize Article and Illustrations from the Bee-Keepers' Review.]

Commercial Queen-Rearing in all of Its Details.

BY W. H. PRIDGEN.

VERY few queen-breeders now allow the bees to construct their own queen-cells. The cells are dipt and fastened in some way to a stick and then supplied with just-hatched larvæ. If only a few cell-cups are needed they may be dipt by using a single dipping-stick, dipping a single cell at a time; but this is too slow work where there are many cells to be dipt.

The dipping-stick should be not larger than 5-16 of an inch in diameter. The tapering part should be 5-16 of an inch long; reduced rapidly the first $\frac{1}{8}$ of an inch, and then gradually reduced to the end. It should slip into a worker-



A Whole Battery of Dipping-Sticks used in Modern Queen-Rearing—and the Results.

cell one-eighth of an inch before filling the mouth of the cell, and form a sink in the wax-cup that will bear sufficient pressure to make the cocoon fit snugly without touching the bottom. The accompanying illustration shows my first plan for dipping a large number of cups at one time, and attaching them to slats by means of melted wax; but the time has arrived when cell-cups will be on the market, and we need a bar to which they can be attached without melted wax. One, a half-inch square, to fit between the end-bars of a brood-frame, with 18 5-16-of-an-inch holes bored nearly thru, and five-eighths of an inch from center to center, furnishes just such a bar.

Only one round nail should be used at each end when fastening it in the frame, so that the holes can be turned out for the cups to be inserted and the larvæ transferred, with the frame lying on its side. The bars should be immersed in hot wax before put in use, and if the larvæ only are transferred the cups should first be slightly prest into the holes with a peg that fits the bottom; but if the cocoons be transferred with the larvæ, it is only necessary to set them over the holes, and the slight pressure necessary to make the transfer will also tighten the cups.

The bar should be put across the center of the frame, and the space above it, except a bee-space immediately above it, be filled with a thin board nailed in. There will be no necessity of ever taking the bar out of the frame; as, if provided with wire loops, the nursery (see next page) can be slipped over the cells in less time than it takes to count them, and the queens removed as they emerge; or the cells can be detached and used in the usual way, by simply running a knife between them down to the bar, and prying them off.

To dip cell-cups that are smooth inside, the first dip must be full-depth, and the others varied according to the temperature of the room and wax. Usually the second dip should only be half way up, and then the third one will finish it, unless the wax is too hot, and should be nearly full-depth.

The use of the new cell-bar will simplify the dipping of cups wonderfully, as any number of the forming-sticks can be made fast in a board, in rows of suitable distance to admit of conveniently removing the cups, or the sticks can be made fast in the bars, as teeth in a rake, instead of loose, as shown on the first page, and a number of these sets can be fitted into a frame and all dipped at once, by having blocks of varying thicknesses, or some other arrangement, to be adjusted while the wax is cooling, after making a dip, for the frame or board to come down on, to change the depths of the different dips. It is not necessary to make the base of the cups heavy, as is the case when they are to be stuck on slats with wax, and the sticks need not be varied from a perpendicular position, but simply give a little jerk to dislodge the drops as soon as they form on the points, to prevent having long necks to the cups.

The latest machine dips them by turning a crank, and the pins have two motions. They go around like the spokes in a wheel, and they whirl, or slowly revolve, as they go around, which keeps the wax spread evenly around until it sets, and prevents the long points that are so bothersome when dipped by hand. The wax must be the right temperature, and the dipping done by a steady, slow movement. If moved too fast the wax will be forced up too high on the pins, and make the cups with a long side and a short one. Altho they are turning while in the wax, they will not turn entirely around while at the deepest point.

The pins are arranged on the circumference of a wheel, but not put on entirely around the wheel, and after all are dipped, and the point reached where no pins touch the wax, all is suddenly raised sufficiently for them to miss the wax, and another revolution given without stopping the wheel, followed by a pause for cups to cool, and then repeated until the cups are sufficiently heavy. Then the wheel is carried over to the water-trough and the cups removed. If the weather is cool, the water should be kept at a temperature of about 100 degrees, Fahr., to make the cups slip off easily.

The machine automatically varies the depth of dip by means of a plate with a thick side and thin one, that is, moved around one notch every time the point is reached where no pegs touch the wax. Over this is arranged a piece of hoop-iron that moves up and down, on which the thumb-screws rest that are used for adjusting the machine to the quantity of wax, and for lowering it as the wax is used up.

As queen-breeders generally will not consider such a machine practical for making cups for their own use—as more simple arrangements can be used for securing satisfactory cups in a wholesale way—I will not go into all of

the particulars, but will add for the benefit of those who want to make them for sale, that the pins should have sharp shoulders the right distance from the points to give the cups the desired depth, which will trim each cup to a uniform depth, and remove the feather edge so liable to be broken off in handling. It should be a square cut in, and the cup made on the head or larger portion. The cells made on pointed sticks are just right for use when the transfer is made by using the cocoon, and there is nothing to do when they are placed over the holes but make the transfer, and they will be fastened in the bar at the same time. If larvæ only are to be transferred, a peg the same size and shape of the transfer-stick, except the end should be round and smooth instead of concave, can be used for pressing the cups in the bar, which will stretch them and make them the right shape inside. No attempt should ever be made to fasten them in unless they are soft enough to mash up without cracking.

Inasmuch as the bees more lavishly supply larval food to royal larvæ than to worker for the first three days, and all agree that the resulting queens are no worse for it, while the experience of many verifies the fact that they are better, I prefer a plan of transferring whereby newly-hatched larvæ can be used. This is done by supplying the breeder with combs so old that the bottoms of the cells have lost their hexagonal shape, and are thick and dark. A piece of such comb may be shaved down with a keen-edged, slightly heated knife, so as to cut it smooth, within one-eighth of an inch of the bottom of the cells; and by bending it back and forth, the cocoons will drop from it, unless it has been sufficiently exposed to moisture to mold.

It will be found that all do not work alike; some seem to be glued in, while others almost fall out, with all degrees between, but usually they can be transferred by taking them up on the transfer-stick, herewith shown, which is sufficiently rounding at the points to slip into them without bruising them; altho they may be stretched a little thereby, which should be the case. The end has a funnel-shaped cavity in it that fits over an egg, or small larva, and takes the cocoon up, fitting like a gun-cap on the tube, which, by a slight pressure and little twist, is transferred to the cup.

It is more satisfactory when the comb is old enough so that the outside of the cocoon is black and glossy, and any adhering thin tissues that are liable to come above the edge of it in the cup can be rubbed from it while it is on the stick. Whenever only a transparent tissue is taken up it is useless to insert it into the cup, as it has not the stability to preserve its form while the transfer is being made. Whenever they loosen up by simply bending the comb back and forth there is nothing to do but insert the transfer-stick and take them up; but, with other pieces of comb, it may be necessary to slightly work the stick back and forth as tho it is to be shoved or pulled out sidewise before it will adhere. After one has been stretched too much to fit the stick it cannot be taken up. Slightly waxing the end of the stick may help in obstinate cases.

I prefer using larvæ too small to be seen, that are surrounded by clear or slightly-milky food; but those larger than the head of a brass pin can be transferred.

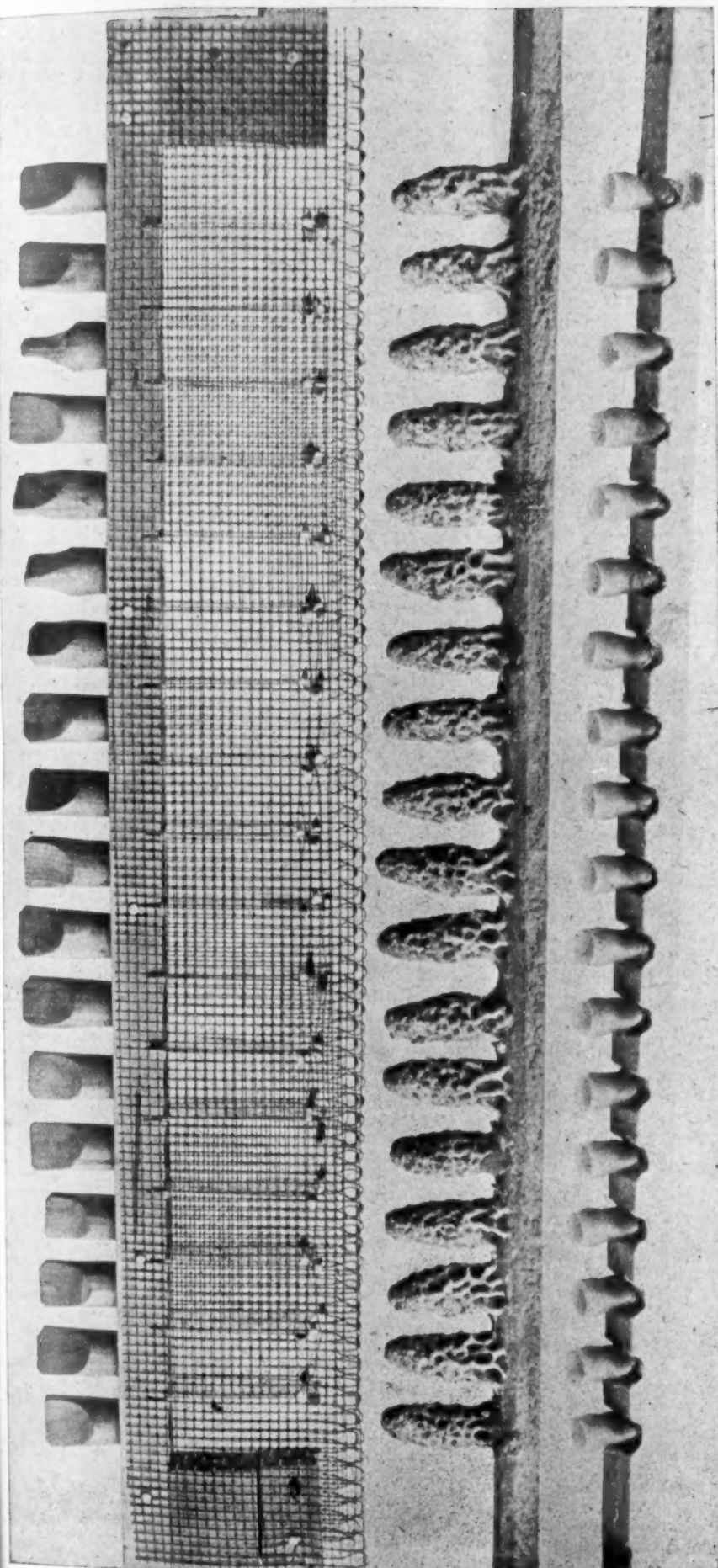
When only a small wet spot can be seen in the bottom of the cell the larva will be accepted all right by queenless bees; and one can rely upon being on the right side as to age, as well as certain of the fact that it has been amply fed up to the time of the transfer; especially so if the comb be given to bees anxious for larvæ to feed a few hours before.

The same comb will usually supply larvæ for 3 or 4 days if kept in the breeder's hive as long; and by returning the combs to the breeder after the brood is sealed, there will nearly always be one from which the bees are hatching solidly, which will be filled with eggs just as fast as the bees in the breeder's hive feel the need of brood to feed. In this way only one set of combs need be cut.

Some report better success when transferring larvæ only if no royal jelly be first put into the cups, as the bees begin to feed them as soon as they are transferred. It certainly should be floating in the milky food before it is transferred; and at times when it is sticking to the bottoms of



Transfer-Stick.



the cells with only enough around it to keep it living, good queens need not be expected if such be used. Then it is that the comb from which it is to be used should be given to bees without brood at least 24 hours in advance.

The majority will be more successful in having cups accepted, and attain better results, if they first be given to bees deprived of both queen and all unsealed brood from 6 to 12 hours previously.

Nursing begins the instant they are given, if the bees be long enough queenless to receive them, which is of vital importance, as the larvæ once neglected are slow in development and result in dwarfed queens.

In preparing bees to start cells, it hastens matters wonderfully if they be shaken from the combs, whether it be from the combs of one hive on to those of another, or right into the same hive.

When they are thus disturbed they begin to search for the queen immediately, realizing, I suppose, that she is liable to an accident under such treatment, and they act very much like a swarm when the queen is mist.

If shaken from the combs of a normal colony on to combs minus brood, from 3 to 6 hours is ample time, and sometimes the cups have to be given sooner to quiet them.

At the time when the greatest distress is shown is when they will accept the greatest number, and the chances for the best results lessen as they reconcile themselves to their condition.

If one is making a business of queen-rearing he should keep a colony at work as cell-starters. Fill a body with combs of brood and place it over the colony selected, with an excluder between. Twelve days later place this body on a bottom-board, minus the most of the board, with wire-cloth tacked on as a ventilator; stop the entrance so that no bees can escape; shake the bees from the combs and examine them for cells, removing any that are found.

Substitute a comb $\frac{1}{4}$ full of water, for one in the hive, or pour a little water into one, as they will consume quite a bit when thus shut up, and remove as many more as there are batches of cells wanted, to make places between other combs to receive them.

The bees will cluster in the spaces thus formed, and the cups can be inserted before many bees escape, which they are anxious to do.

Regardless of the kind of hive used, there should be a cloth over the frames before putting on the top, so that it can be gently rolled back and the bees smoked until the spaces are reached, to avoid their escape.

The greatest number of cups I have ever given was 36, and have had as many accepted.

Usually I prepare the bees about 9 o'clock a.m., give them

the cups at 1 to 3 o'clock p.m., and wait until the next morning to remove them.

Mr. W. S. Pender, of Australia, allows queenless bees to work on one batch 2 or 3 hours, and then gives another, and so on, but, as I know they will accept as many as two batches all right, late in the evening they and adhering bees can be given to cell-builders, and the balance set back over the excluder, ready for the same operation the next day, or whenever desired.

At this date (April 4) I am unable to experiment and ascertain how short a time the allowing of the cups with the cell-starters will suffice, but, of course, Mr. Pender knows.

When this stage is reached another body should be filled with combs of brood and placed over the excluder, and the one just used for the cell-starters put on it when it is returned. Then, when the top one is set off to prepare the bees for accepting cups, some can be shaken from 2 or 3 combs of the one immediately below it, which will be sufficient to start the excitement.

In 10 or 12 days more, all of the bees will have emerged from the top set of combs, and all the brood in the second set given will have been sealed, so that the first set can be disposed of, another set with brood prepared, and the second set come into use in having cups accepted. At these intervals the giving of brood and removing of combs can be kept up during the season, and the bees worked as described daily, or nearly so. Every time a new set is given, those previously given should be examined for cells, and the cells removed.

The brood given keeps up a strong force, altho some bees are removed each day with the cups to the cell-builders. When no honey is being stored the colony should be daily fed a sufficient quantity of syrup to fill the combs as the brood hatches out.

The main point to keep in view is, that whether bees are confined, or made broodless and queenless on their stand with liberty to fly, they will accept cups in a few hours after the queen and all unsealed brood are taken from them.

In preparing a hive to have cells built above an excluder, with a laying queen below, the excluder should be nailed to the top body, and have a bee-space between that and the frames above and below. If the hive is wide enough to take ten frames and a division-board, a tight-fitting-board can be tacked in the center to the excluder, and form two apartments, holding five combs each, thereby doubling the capacity of the colony for cell-building, without ever taxing it to feed more than the usual number at any one time by giving a batch of accepted cups in the center of one apartment between two combs of either sealed or unsealed brood, and as soon as they are sealed, say five days later, place another in the other. This gets it into working order, and one batch can be removed and another given every five days.

Whenever cells are built by queenless bees, if nuclei are to be formed, a sufficient number of combs of brood and the adhering bees should be placed under them as soon as they are sealed, to furnish at least one comb for each cell. Just before the time of hatching the cells should have a nursery slip over them, and then the nuclei can be formed and queens given as fast as they hatch; or, say twice a day, as all will not hatch at once. No doubt it is better to form the nuclei late in the evening, so that the bees will become accustomed to their changed conditions before they can fly.

Another lot of combs, bees and cells can at once be placed on the same stand to catch the returning bees, and work in a like manner, to be again and again repeated if necessary; but, of course, in the latter case care should be exercised in selecting all sealed and hatching brood, as the combs will be used within two days for forming nuclei.

When queenless bees are not used as cell-builders a queen can be removed from a colony and other bodies piled on provided in a like manner a few days before nuclei are to be formed, and by allowing the queens to hatch out in a nursery hereinbefore stated, all is ready to form nuclei, without having unsealed brood in the combs to starve as is often the case when drawn from normal colonies; besides, bees thus treated will remain in the nuclei better than those taken from a colony with a queen, even if cells be given, instead of queens.

After getting the bees in shape to be ready for forming nuclei, they should be fed all the syrup they will take every evening, until the divisions are made, except during a flow.

After ascertaining how to have virgins or cells accepted, that is, to bring about the conditions necessary under varying circumstances, it is not only a waste of time,

but often proves to be a loss to open a nucleus from the time a virgin is two days old until the time for her to be laying. Virgins are hard to find, and the bees often act as tho they were queenless while the virgin queens may be present; and, worst of all, often kill them if no honey is being stored, if disturbed.

If virgins are given and not accepted they can often be found near the entrance next morning. A stroll in the evening among those containing queens of mating age will often save time, as there will be considerable distress manifested where a queen has taken her wedding-tour and failed to return, which is sometimes kept up until the next morning, but usually by that time all is quiet. Such cases should be noted, and cells or queens given the next day.

The tin divisions in the nursery are $1\frac{1}{4} \times \frac{3}{4}$ inches, are slightly let into saw-kerfs at the bottom, and are $\frac{1}{8}$ of an inch apart, thus forming apartments about $1\frac{1}{2}$ inches deep and $\frac{3}{4}$ square. The pegs have holes in them for holding the candy, and should be dipped in melted wax before being used. If one has them, cartridge-shells can be used instead.

To remove the queens one should be provided with a number of cages, made by rolling up small pieces of wire-cloth into tubes three or four inches long, with one end prest together or closed, while corks or bits of comb make nice stoppers for the other. If the queens are too young to fly, a number of pegs can be withdrawn all along, and the queens allowed to crawl into the cages as they come out, without ever allowing two to clinch, as it almost invariably means death to one. When this is being done the nursery should be lying on its side, and the queens can be distributed by simply allowing them to crawl from the cages down between the combs, or in at the entrance, and give a puff or two of smoke behind them.

If they are to be kept in a nursery very long for any purpose, they should be transferred to one minus cells, as the space is small, and they are liable to get wedged up between the nursery and cells, and perish in attempting to find a way of escape.

In removing those old enough to fly, only one peg should be removed at a time, and the cage should be placed right over the hole. The operation can be hastened by inverting the nursery.

In slipping the nursery over the cells (which is held in place by drawing the wire loops already on the bars over the ends), the tin will cut its way unless an unusual amount of wax has been used in joining them together, as is sometimes the case when the bees are anxious to build comb; and when that is the case they should be separated with a hot, thin knife.

If the cells instead of queens are to be given to nuclei, the nearer the time of hatching the better, and, as they seldom hatch on the orthodox tenth day, if larvæ of the best age are used, it is quite a convenience to attach the nursery and feel easy until they do begin to hatch.

If the division be made when the bees are flying freely all can be shaken from the comb or combs of unsealed brood, and the returning bees will be sufficient to protect it at once.

As soon as virgin queens reach the combs they begin a search for honey, and bees seldom attack a queen while in the act of securing nourishment. No attempt should be made to introduce a virgin by simply releasing her in the hive after she has become very active, whether it be those held in the cells by the bees, as in cases of second swarms, or that have been in a nursery, unless it be to the bees surrounding them.

During a honey-flow the feeble, downy-looking misses can be given the same day the laying queen is removed, with a considerable degree of safety. I have thought that it is safer to give them at once, than any time afterwards, before the bees fully realize and reconcile themselves to their queenless condition. If given to colonies with feeble, old queens they will often be accepted and commence laying with the old queen in the hive, as is the case with supersedures.

When I have a surplus I often release them in colonies having old queens, and allow the bees to take their choice between the old and the young.

Virgins at the age of two or three days or older can be shipped from the nursery, if escorts from the same hive be used.

Another consideration in the use of so simple and convenient a nursery, is the saving of time with nuclei. A virgin can be given as soon or sooner than a cell, regardless of the conditions, and the time between the giving and hatching of the cells is saved; besides, fine looking cells often

fail to hatch, and it is not uncommon for others equally fine to furnish queens deformed, and that should be discarded instead of consuming valuable time in a nucleus.

While I prefer allowing the bees to have access to the cells until within a day or two of hatching, so as to add to or take wax from them as they see fit, still, if the proper temperature be maintained, and, as they can be inserted without rough handling, or changing their positions, it can be done any time after all are well sealed; and thereby reduce the number of days of queenlessness when built by queenless bees, or allow the giving of a fresh batch oftener to those over an excluder.

In multiplying nuclei the reasons for leaving the queen and unsealed brood on the old stand is that the field-force and enough comparatively young bees return to it to feed the larvæ and keep the queen laying, leaving the others in a better condition to receive a young queen, which will have a field-force by the time she begins to lay, and bees hold more tenaciously to the hive they have for some time occupied, and will sulk when the field-bees quit coming to it, instead of deserting the brood as they often do when given a new hive and location without their queen.

If the queen be carried to the new location she will be comparatively idle until the bees begin field-work, whereas, at the old stand she is kept busy. Warren Co., N. C.



Robber-Bees in the Apiary—What About Them?

BY C. DAVENPORT.

IN the long ago, when I was young in years, and in bee-keeping also, I spent considerable time in anxiously watching hives when young bees were rushing in and out during their exercise or play-spell, wondering if it was not a case of robbing. The subject of robbing was in those days a sort of nightmare affair with me, and I was always dreading and expecting a desperate case of it to commence, and when finally two or three weak, and what I now know to have been queenless colonies, were cleaned out by robbers, I thought I had at last discovered the cause that might prevent me acquiring great wealth with bees, and that it must be this same cause which had prevented old, experienced bee-keepers from becoming rich, for, in those palmy days of youth, it seemed to me that, barring some great unforeseen calamities of this kind, it would be an easy matter to make a great amount of money with bees, besides fully enjoying all those things which we would not sell for money if we could. But if whole colonies were to be wiped out by robbers in such a short time that I hardly knew anything about it until the whole affair was over, it changed the appearance of the prospects.

Now, I do not suppose there are any at present who hold such exaggerated views in regard to our pursuit, or who dread robbing as I did in those days, but possibly some who have not been long engaged in our fascinating, if not wealth-acquiring, pursuit may be interested in what I shall say on the subject of robbing, for I remember how eagerly I then read everything I could find regarding it. This was considerable, but it seemed to me the writers treated the matter in an awed, scared way, giving grave warnings not to do anything to incite it, vaguely hinting at the great danger a bad case entailed. Brief accounts of how bands of frenzied robber-bees had attacked and killed almost all kinds of domestic animals, and in one or two cases they had sacrificed human life itself to their blind, unreasoning rage; and what dismayed me the most, was what was said about the colonies in large yards robbing and fighting until the greater part were destroyed. The subject was not an assuring one as then treated, most particular caution being given not to throw a drop of honey or anything sweet where the bees would have access to it during a time of scarcity, or when no honey was coming in.

Two years ago last fall, at a time when not a drop of honey was to be had in the fields, and as the general expression would be, "bees were just crazy to rob," while shoveling honey out of the cellar one day, I smiled grimly as I thought of this warning, for there were nearly 200 colonies within a few rods. "Shoveling honey out of the cellar" causes a gasp of amazement to a young lady leaning over my shoulder, then follows such a volley of questions that I retreat across the way to my bachelor den, where I am safe from interruptions of this kind. But perhaps I should explain that this honey was stored in a room over the cellar; it was in a large alcohol barrel, about 500 pounds of fine mixt clover and basswood. The barrel got to leaking, and before I knew it the honey was all in the cellar

which had a dirt floor. I shoveled out three or four wagon loads of sand and honey mixt, which the bees industriously worked over, and no trouble with robbing occurred; in fact, if I have any broken comb, sticky frames, or anything else that I want cleaned up, bees are allowed to do the work whether honey is coming in or not, and with me full colonies worth saving protect themselves from all robbers that ever mass together and attack them, and with no precaution taken except in some cases to contract the entrances; that is, after they have had their first cleansing flight in the spring. The only actual trouble and loss I have had on account of robbing has occurred when the hives were first set out in the spring, when the number of colonies wintered in cellars is so large they can not be, or if for any other reason they are not, all put out the same day, there is danger under some conditions, of those set out first robbing the ones put out later.

Bees usually will not make much effort to defend their hive from attack until after they have had their first flight in the spring, and by the time this is over the robbers may be at work in some hives in such force that there is apparently but very little effort made afterwards to repel them.

An old idea, and one still largely believed is, that after bees have concentrated in large numbers to secure any sweet that may have been exposed, or when a queenless colony has been overcome and cleaned out, the whole mass then, if nothing better offers, throw themselves upon some one colony, which even if a strong one may not be able to repel them. This is entirely erroneous, and it is well that it is, for if they did make a determined attack *en masse*, half or more of the colonies in a yard might be destroyed in a short time, but the way they really do, after whatever they have been at work on is about gone, is to scatter or divide up and look for more. Single bees, and in a few cases I have seen about a dozen, attempt at nearly the same time to enter some hive with an unusually large entrance, or one which did not seem to be as well guarded as others; but if they get in at all they are soon dragged out again. Meanwhile, the whole yard may appear to be getting in an uproar, great masses of bees may cluster on the top and around the sides of hives that are tiered up on some colonies, a great number of bees may be flying in and out of the hives which seem so strongly attacked, and many a novice might think the matter was beyond his control, and imagine ruin staring him in the face.

I have seen even old, experienced bee-keepers get excited, and spray and throw water on these hives on which robbers were clustered in a frenzied attack, but if a close observation is made it will be seen that these apparently frenzied bees take good care to keep out of the entrance. If one more venturesome than the rest does get in it is roughly handled. The bees flying in and out so lively are bees that belong to that hive, and they are ready to fight to the death if necessary to defend their stores.

A colony of average strength, if in normal condition, will, before succumbing to robbers, make such a fight that it would always be remembered by one who witness it; and it is something I feel safe in saying, but very few have ever seen, after a whole yard has, as the novice would think, begun robbing, it is in reality only the colonies as a whole becoming waked up to the fact that something unusual is taking place, and they are flying around to find out what it is. Then a general call to repel boarders follows, and in a few days things quiet down, with no harm done.

Still, as a matter of fact, I think it much better to avoid as much as possible all disturbances of this kind in a yard, especially late in the fall, for it excites and worries large numbers of bees, and this may do harm by impairing their vitality to endure the long confinement of winter. But whenever I wish to handle a colony for any purpose, such as taking out or exchanging frames, I always do so without any regard whatever as to robbing, no matter whether a drop of honey is coming in or not. In some cases hundreds of robber-bees will get into the hive and on the combs of the colony being handled, but after the hive is closed up they are soon expelled and others prevented from entering. No precaution is taken except to contract the entrance more or less, depending upon the weather and strength of the colony. I do not advise others to do so, but I have practiced this for years with no bad results. With nuclei the case is different. I have reference to full colonies, tho they may be pretty weak and still repel robbers if in normal condition.

In regard to robbing in the spring when bees are first put out, as before mentioned, there is an easy way to overcome this. Simply smoke the colonies already out enough so the bees will fill themselves with honey. It is very

quickly and easily done, does not harm the bees, and no robbing will be attempted until the honey in their honey-sacs has been put back in the combs, and they will be some time doing this, but it is only under exceptional conditions that robbing in the spring is likely to be started. What these conditions are I would be glad to explain for the benefit of the inexperienced, but I fear I have already gotten outside the space I am allowed in one article.

Southern Minnesota.



The "Old Reliable" seen thru New and Unreliable Glasses.
By E. E. HASTY, Richards, Ohio.

KEEPING TOADS OUT OF HIVES.

Mr. Brown, I fear it will make us tired eventually to put on wire toad-protectors every night and take them off every morn. Lest we should some of us get exasperated and commit the repulsive crime of bufocide, I will suggest to have the toad hitch to the brandy-bottle on which the hive stands, and the string so short he can not quite reach the entrance. Page 315.

BLEACHING SECTION HONEY.

The bleaching of section honey which may from any cause be off color, by direct sunshine, is an attractive idea, but beset with difficulties. The propolis varnish will hardly bleach. Pollen may, one would say. Who knows but that dark honey itself may sometimes bleach? Sunshine will not raise the capping which touches honey—but may it not accomplish a little of the same thing sometimes by lowering the honey beneath till it no longer touches? If there is a bad look which is caused by a microscopic surface fungus, sunshine would be a hopeful thing to try for that. I judge that the danger of getting a big lot of honey melted down would, in some climates, be serious. Outdoor sun would be a little safer than behind glass; but the other danger of robbers would mostly forbid that. On the whole, I guess we must wait for the philanthropic individual to experiment, and bear the experimental losses, and we fall in only after he has reported decided success. Page 311.

GRAPE-VINE SHADE FOR BEES.

The grape-vine shade was a particularly precious fad of A. I. Root's, and it's almost sad to see it ill bespoken on the spot of its birth. Sometimes there is a little of unconscious predisposition to see all the faults and more in our predecessors' pet things—but perhaps nothing of the kind has operated in this individual case. Page 311.

PUTTING SECTIONS ON EARLY.

It is generally supposed that putting on the sections early decreases swarming somewhat—certainly adds room, and the wise heads all say, give 'em room; but I have sometimes had my doubts. Mr. O. O. Belden, page 310, gets in line with these doubts where he thinks that sections that the bees are not ready for encourage swarming if they have any effect.

WAX-EXTRACTOR CLAIMS ALMOST TOO GOOD.

As to the Ferris wax-extractor, I would await reports from those who have bought and used it. It looks a little *too good*—like some of the double-acting and self-righteous hives that used to be offered us. Page 307.

AIKIN'S BEE-BRUSH—BEES TEARING CAPPINGS.

The Aikin bee-brush, size and length of one's arm, for rough-and-ready wholesale brushing of the whole bottom of a super, as nearly as may be all at once, is worthy of a place and a name, I reckon. He would have it made of coarse marsh-grass, not too stemmy, but rank and wild enough to stand weeks of sun and many wettings up with water to put it in condition. It is a golden rule—not only for taking off supers, but also for pretty much all bee-operations—not to let bees either turn back or stagnate after having started them once. Just keep 'em "gittin' furdur" right straight along. I never thought before about there being an impor-

tant difference as to the time of the day in the matter of bees tearing open the cappings of sections. Now he calls our attention to it I can see it. Not likely to tear cappings when they are carrying honey already; and that state of things is more likely to exist well along in the forenoon than at dawn. *Have your supers of sections peel off clean, with no burr-combs and no drip whatever. Just hear a strong man shouting once as Aikin says that.* Page 322.

"MIXT VARIETIES AND THE HONEY-BEE."

This, it seems, is the war cry which Prof. Cook recommends for the horticulturist. The too greedy cultivator has been greatly inclined in the past to find out what one variety had the most money in it (often a showy fruit hardly fit to eat), and then to plant great solid blocks of that one thing. Nature boxt his ear for it. Nature says: Mix your varieties so intimately that comparatively few flowers will have to depend upon the pollen of their own kind. Have this motto printed around your button—and let the bee do the rest. Page 321.

FALL REST FOR QUEENS.

W. A. Pryal's idea of letting queens have a short fall rest and then stimulating them to lay again in December may be valuable for locations with balmy winter climate. The object of course is to have a strong colony of young bees to open spring with. Page 324.

QUEEN-EXCLUDERS, ETC., FROM FOUL-BROODY COLONIES.

Human beings are mostly much alike. Most of us can be worried by hostile blows often repeated into taking a violently contrary kink—*after which we are no longer good authority on that particular point.* McEvoy with wide experience with foul brood, and great abilities in getting it cured, has been pelted for his easy-going notions about its communicability till he seems to have taken just such a kink. I object quite decidedly to our Dr. Miller's abdicating his own judgment in Mr. McEvoy's favor as he does on page 326. Furniture from a smallpox hospital may be used a dozen times outside and no harm result; but still it is not perfectly safe—and it would be an outrage for a leading journal to teach the people editorially that everybody should do so without fear. Same about the queen-excluders from foul-broody colonies.

A NEW NOTE ON INTRODUCING QUEENS.

The Ranson method of safe introduction, on page 329, seems to strike a new note where we hardly expected anything radically new. Get the queen scented with the scent of her prospective home by causing a lot of very young bees to crawl over her. Not a bad idea, perhaps.

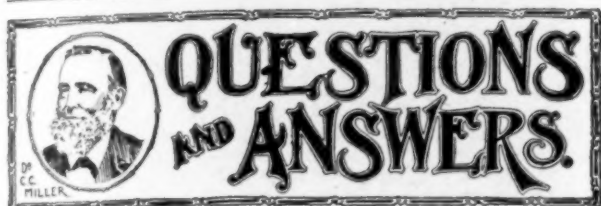
INTRODUCING VIRGIN QUEENS.

The fact, apparently proved by Mr. Doolittle, page 329, that any method of introducing virgin queens that keeps them alone for awhile shortens their lives and possibly damages them otherwise—well, that is an important fact, and one not generally in people's minds—therefore, a little "rub it in" in this department is in order. One may suspect that any restraint, for more than a few minutes, of the propensity to scramble around endlessly may be a damage to a virgin queen's development. Where Nature says so emphatically "Exercise, exercise, exercise," it should hardly turn out well to go to the contrary extreme.

DISTANCE BEES GATHER PROFITABLY.

And so a mile-wide river, to-wit the Mississippi, close up to an apiary operates to reduce by about one-half the number of acres within actual foraging oversight of the bees, and cuts down the crop decidedly on that account. Bees can go across such a barrier, but mostly don't. Mr. C. P. Dadant very ably handles one side of the problem, how far bees may be depended upon to harvest the honey of a piece of territory. How far bees can (and sometimes do) gather, and how far they habitually do it, are two very different questions. Have been known to gather at eight miles; and a radius of that length would include over 200 square miles of territory. With 10 colonies for each mile it should then be possible to run 2,000 colonies in one apiary. That sort of thing does not work—presumably because bees do not *habitually* keep in touch with the honey-yield for any such distances. My own opinion is that finding the honey, and not the journeying for it, is the main difficulty. I even dream that great discoveries in our craft may yet be made in the line of helping our bees find distant honey promptly. On this very important practical problem Mr. D. seems inclined to lead the short-radius end of the class, and to put

the practical radius at less than a mile and a half. Some of the experiences given are remarkable. An apiary only a quarter of a mile nearer to the fall crop on the river bottom always showing in pounds of honey the advantage of that quarter mile. One failure to find, in a bad famine season, a good harvest less than two miles off. And in an extra-good season two of their own apiaries, only a moderate number of miles apart yielded 140 and 50 pounds, respectively, as averages. Page 323.



CONDUCTED BY

DR. C. C. MILLER, Marengo, Ill.

(The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.)

Queenless Colony.

I have a queenless colony that I have been trying to build up. I have given them brood three times, as recommended in "A B C of Bee-Culture," but they have no queen-cell yet. They started one, but for some reason tore it down after about six days, and since, tho they take good care of brood given them, they build no more. What can I do with them?

NORTHERN IOWA.

ANSWER.—It is just possible that they have a played-out queen, which they hold on to, altho she does not lay. It is also possible that the colony has been long queenless, and the bees very old, and old bees are not good at rearing a queen. But the brood you have given them will be hatching out, and the young bees will rear a queen if you give them young brood or eggs. If you keep right on giving them all the brood they can cover, there is little doubt they will rear a queen. But, as a rule, a colony that has been queenless a long time might about as well be broken up. A queen reared by them is not likely to be satisfactory.

Symptoms Point to Bee-Paralysis.

I wish to ask advice about a disease that seems to be established in my apiary. I can not find in the standard bee-books, or in back journals, an explanation of it. It originated in a colony of bees whose queen I received from a well-known firm in Ontario last summer. The bees turn a shiny black about one-third up of their abdomens, which are small and pointed. They literally die by the thousands. The queen is very prolific, the frames being always full of brood. When it was confined to one colony I did not care so much, but now I find another of my best colonies going the same way, and I do not know what to do for them.

BRITISH COLUMBIA.

ANSWER.—The shiny black appearance points to bee-paralysis, but in that disease the abdomen is not small and pointed, but swollen, and you say nothing about the trembling that accompanies paralysis. It would be well to send a sample of the bees to Dr. Wm. R. Howard, Fort Worth, Tex.

Queenless Colony—Queens Failed to Hatch.

1. About March 1 I bought of a neighbor two box-hives of bees, one very heavy and apparently all right with bees, of course. When I went to bring them home I remark to my neighbor on picking up the hive that "I got every bee," and I could not help noticing the absence of roaring in this hive in hauling them home. After getting them home I noticed they were troubled with robbers, and in a day or two, when I transferred them, I found some 50 or 100 old bees with no queen, with plenty of comb and old honey, all the comb containing honey. What was the matter?

2. My favorite old 3-band queen swarmed about May 1, and I divided into nuclei, leaving of course one ripe cell in

the old hive, but not one hatcht a queen. What do you think of that?

SOUTH CAROLINA.

ANSWERS.—1. It was in all probability a case of queenlessness of long standing, nearly all the bees having died off from old age.

2. Quite likely the cells were chilled. The bees generally build cells toward the outer or lower edges of the combs, which are kept warm enough in a strong colony, but when divided into nuclei there are not enough bees to cover them, and they are chilled. It is well to see that each nucleus has one or more cells in the center of the cluster of the bees. Cut the cells off the edges, and fasten on the surface of the comb where they will be kept warm. A good way to fasten the cell on the comb is to use a tobacco-staple, such as bee-keepers use for fastening bottoms to hives. Let one leg of the staple be over the queen-cell, and thrust the other into the comb.

Hive to Check Swarming.

What size hive would you advise for a honey-flow of from 2 to 4 pounds per day from the last of March to the last of May? I am using 8-frame, some with two stories. My first swarms came from the two-story ones. I want to check swarming all I can.

SOUTH ALABAMA.

ANSWER.—Seeing you already have the 8-frame hives, it is quite likely they will suit you as well as any. Other things being equal, two stories will give you less swarming than one-story hives. It is likely that your two-story colonies swarmed more because they were so much stronger. If you had made two of the colonies change places, it would be pretty sure that the one you changed into the smaller hive would have swarmed first. If you are running for extracted honey, you will find two stories all right, but for some reason I have not been able to make two stories work so well for comb honey. To make more sure against swarming, raise the hive three-fourths of an inch or so on four blocks, and make sure that there is a large entrance between the first and second stories. This last is a great help to prevent swarming.

Carbolic Acid vs. Smoke—Flour in Syrup for Pollen—Feeding to Stimulate Brood-Rearing.

1. How shall I proceed to use carbolic acid instead of smoke among bees?

2. (a.)—Can wheat flour be put into sugar syrup in spring feeding, to answer purposes of pollen? (b.) If so, in what proportion?

3. (a.)—Is it advisable to feed in spring to promote brood-rearing where there is plenty of stores in the hive? (b.) What danger is there in feeding, if not begun too early? (c.) What would be the safe time to begin in latitude 42 degrees, 30 miles west of Boston?

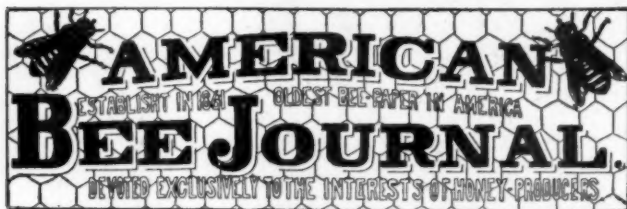
MASSACHUSETTS.

ANSWERS.—1. The use of carbolic acid in place of smoke does not seem to meet with much favor in this country, altho some bee-keepers in England are partial to it. Wet a cloth with a solution of the acid, lay the cloth over the frames, and the fumes will drive the bees out of the way in a very short time. You will wonder why I don't tell you how strong to make the solution, and I would gladly tell you, only I don't know. At a guess I should say one part acid to 50 parts water, but that guess may be wild.

2. (a.)—Some use it that way. (b.) I don't know of any fixt proportion, possibly 1 to 20.

3. (a.)—Doubtful. If everything is managed just right, and if the weather is just right, it may be a good thing. (b.) If begun late enough there may be no danger. The chief danger is in stirring up the bees to fly when it is too cold. But if begun late it does little good, for the bees will be then sufficiently stimulated by gathering natural stores. (c.) A skillful and prudent bee-keeper might begin any time when bees fly freely. One who is not very careful better not begin at all, and many of the veterans, perhaps the great majority of them, do not practice it at all.

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NO. 26



NOTE—The American Bee Journal adopts the Orthography of the following Rule, recommended by the joint action of the American Philological Association and the Philological Society of England:—Change "d" or "ed" final to "t" when so pronounced, except when the "e" affects a preceding sound. Also some other changes are used.

The Brosius Pure-Food Bill was before the last session of Congress, but we learn that no action was taken upon it. However, the friends of the measure in both House and Senate, we understand, are very hopeful of its passage early in the next winter session. All bee-keepers will unite in the hope that it may receive prompt attention when Congress reassembles.

The Honey Season for 1900.—It seems from the reports so far the prospects are not very flattering for a good honey crop this year thruout the country generally. Gleanings in Bee-Culture for June 15 contains these editorial paragraphs referring to this matter:

Altho it is a little early to make any predictions as to the honey-flow, owing to the lateness of the season, yet present indications would seem to show that the supply of white clover honey will be rather limited this year. Walter S. Pouder, of Indianapolis, who is in close touch with a large area of country, writes, "There is scarcely any white clover in Indiana, Southern Ohio, and Illinois. The outlook is discouraging, and business is growing lighter." Owing to a lack of rains, H. G. Acklin, of St. Paul, wrote us a rather discouraging letter a week or so ago. Since then there have been good rains, but I fear they are too late to do much good unless with basswoods.

The season in California will be better than was at first expected; and especially is this true for the northern and central portions of the State. The rains finally came in the southern part, but too late for the amount of good they might have done.

Black brood has got such a start in certain portions of

New York that many of the bee-keepers are discouraged; and even if there is a honey-flow I fear there will be but few bees to gather it. F. A. Salisbury, of Syracuse, reports that prospects are not flattering.

In our vicinity I have seen almost no white clover out, altho there are a good many patches of alsike; but these patches are so limited I fear they will not yield much honey.

Altho this is the 13th of June, our bees at the home yard are getting but very little honey, and the same is true of the out-yard about two miles north of us.

While all of this looks very discouraging, yet it must not be forgotten that the season is unusually late, and there is yet a chance for a fair honey-flow, because the greater portion of the country is being visited with frequent and warm rains. These will have a tendency to stimulate clover, resulting possibly in a slow but continuous nectar supply for a considerable length of time. It should also be remembered that it is a little early yet for most places for clover.

By the way orders have been coming in from Colorado, it would seem that indications, at least for that State, are exceptionally good. As the bee-keepers there do not have to depend upon rains, but on irrigation, in all probability they will have another heavy honey-flow; and I would say to the bee-keepers of that State, do not be in a hurry to sell your honey; for if there should be little or no honey in the East you of Colorado will have things largely your own way. With your splendid organization and fine honey, it is evident that the honey-buyers will have to take the honey at your price.

If honey will be scarce, those who do get a crop will be able to gauge prices accordingly. In any case, don't sell too low.

Say What You Mean is a good motto, but one not always easily followed. In one of our exchanges is a paragraph beginning with the statement, "Now is a good time to introduce new queens into your apiary," followed by the direction, "Put a queen on top of a hive which is about to swarm, and leave her there until after the swarm issues." Nothing is said as to whether the queen is to be chained on top of the hive, or whether any parasol is to be furnished her in case the sun should be very hot. Neither is anything said as to what is to be done with the new "hive" that issues when the old "hive" swarms, or whether a swarm from the colony may be expected at the same time to keep pace with the increase of "hives."

No, it was not some city scribbler who knows nothing about bees who wrote that sentence. It was a man who is well informed, an expert in bee-keeping, with fine command of the English language, which language would be well handled probably by him to score unmercifully any one else who should be so careless as to write a sentence like the one quoted; and, withal, a good fellow, who will rather enjoy seeing his little failing in this one instance held up to view. It only goes to show that when it comes to the matter of writing in the English language we are all "poor critters," to which this deponent claimeth not to be an exception. But it is also a warning for us all to be just a little more careful.

Art vs. Nature in Queen-Rearing.—Mr. G. M. Doolittle is something of a stickler for following nature, but no one has done more than he toward success in departing from nature in the rearing of queens. It can hardly appear according to nature to have a row of cells made artificially and strung on a stick, all the occupants of the cells emerging as queens at nearly the same time. According to nature, the cells would be scattered about the hive, mostly on the edges of the combs, or on some inequality of the comb, an egg first occupying the cell (instead of a larva as in the artificial plan), the occupants of such varying ages that at the time of the issuing of a prime swarm there will be queen-cells sealed, queen-cells with eggs, and queen-cells at various intermediate stages. Yet, in a certain sense there has been no departing from nature in Mr. Doolittle's plans, and the testimony is that as good or better queens are

reared than can be produced by taking queens reared under the swarming impulse which so many formerly considered the *ne plus ultra* of queens.

Lately there has been a little discussion in the American Bee-Keeper as to the desirability of having queen-cells constantly in the direct care of the bees, that is, having bees constantly in direct contact with them. Mr. Doolittle says that he found from experience that virgin queens kept caged from the bees were short-lived in proportion to the length of time they were kept from the bees, and he now advises the cells and young queens to be constantly in the embrace of bees from start to finish.

W. H. Pridgen favors a short time of caging, and gives some good reasons for it. He says:

"I never did much of this, as I soon learned that I could get a laying queen from one just hatcht about as soon; but as I can gain from one to three days by giving the just hatcht downy misses, with the assurance that as few will be rejected as there are cells that fail to hatch and are torn down, I would be glad for Mr. Doolittle to tell us if he thinks they are really injured at all when allowed to remain caged only a few hours at most, and especially if kept at the temperature of a strong colony.

"I keep my cells in immediate touch of the bees until the time for distribution, and then keep them where the queens emerge sooner than is often the case if given to nuclei, and especially early in the season, and in nuclei newly-formed."

The problem is to keep as near to nature as possible in the line of keeping cell and virgin queen at the best temperature, unless it be that there is some special power resident in the actual touch of the workers—a supposition not to be thrust aside too hastily. According to nature the cell will be kept in a strong colony at a uniform temperature, and if the weather be warm enough, or the nucleus strong enough, there will scarcely be any departure from nature in taking a sealed cell from the upper story of a strong colony and giving it to a nucleus.

Mr. Pridgen makes a point in favor of caging the cell just before the young queen is expected to emerge, by saying that if kept thus till the queen emerges, one can see the queen, whereas when a sealed cell is given to a nucleus there is danger that a defective queen may issue, and possibly that no queen may issue.

Let us be thankful that attention is nowadays so strongly directed to the matter of *good* queens rather than handsome ones.

"Impure Food Must Go."—This is the heading of an item in the Chicago Record for June 18, which reads as follows:

Druggists, grocers, candymakers and packers come under the ban of the new Illinois pure-food law which goes into effect July 1. From that day forward every label on every package of foodstuff must "tell the truth and the whole truth" about the quality of the contents. The man or firm responsible for falsehood will be liable to fine and imprisonment.

July 1 will be a "busy day" for every grocer in the city. Old labels will disappear and new ones take their places. The "pure maple syrup" of yesterday will become plain glucose to-morrow. "Currant jelly" will have a new label, and "apple butter," which never saw an orchard, will have a new name all its own with "apple" excluded. At the breakfast table will be "coffee," and not coffee and chickory mixt, as heretofore. The latter probably will be known as "coffee compound."

Circus lemonade is to suffer, for there is an absolute prohibition of the sale of "lemon extract" which has less than 5 percent of pure lemon-oil. There will be no "honey" unless it is "honey." The present bottled stuff labeled "pure strained honey" will disappear, and "syrup of glucose" will march to the front. There will be pure vanilla, and the druggists will profit thereby.

Next in line among the "interested" people are the baking-powder dealers. After July 1 labels must give a specific statement as to whether the boxes or cans contain

an alum, alum phosphate or cream-of-tartar powder. Vinegar also comes under the ban, and dealers in candy must discover if any impure materials have been used in the manufacture of candies, ice cream or foodstuffs.

When the law was past it gave the wholesale and retail dealers 18 months to dispose of the "adulterated" stock. That time is nearly up, and they are pushing the stuff off to their customers as rapidly as possible.

Bee-keepers will watch with much interest the enforcement of the new Illinois law against adulteration of foods offered to the public. We believe it will be looked after conscientiously by those whose duty it is to see that it is obeyed, as they appear to be men that mean to try to do their duty. We wish them every success, and would be glad to aid them in every way we possibly can.

Those Premium Dr. Miller Queens.—The following letter from Dr. Miller explains itself:

MR. EDITOR:—A correspondent writes requesting a suspension of the rule so that his premium queen be sent at once without waiting its turn. He is probably joking, but there is no doubt that some are feeling that there is unwarranted delay in receiving their queens. And those sending in the last are likely to be among those expecting queens first. It should be remembered, however, that *time* is an essential factor in the rearing of queens, and when there is a large list, those that come at the last end should expect their queens in September rather than in June.

It is only fair to say, however, that the first queens on the list were sent out much later than I had anticipated—a delay which no one regrets more than I. The chief culprit in the matter is that all-prevailing, all-pervading individual, the *weather*. In all my experience in bee-keeping, I think I never knew so much April weather left over for summer consumption. Days have been cold, and nights colder. The first clover blossom was seen May 22, and supers were put on in due season, only to be left unnoticed by the bees till about June 18, when some colonies began work slowly. Ordinarily, when bees store nothing from clover within two or three weeks of its first appearance, it may be considered settled that it is one of the years when white clover doesn't "give down" any honey. This year, however, I suspect the trouble is all due to the weather, and that after waiting four weeks there may yet be a crop of clover honey, if the clerk of the weather only sees fit to allow winter clothing to be laid permanently aside.

If summer really comes, extra effort will be made so that those later on the list will get their queens as early as could have been originally expected, each queen being sent out in order as fast as possible. To those first on the list I can only express my sincere regret—I can not honestly say apology for that for which I am not really to blame—that there has been any delay, the delay probably being more annoying to myself than to any one else.

While I have the floor I may as well say another word as to the character of the queens. Some of them are fine in color, more of them are not handsome at all. As to *worker* progeny, there will probably be very little difference, all being of the same stock. I confess to a real liking for beautiful bees, and would rather have very yellow bees, if at the same time they were the best workers. I prefer utility, however, to beauty, and try to rear the queens that will give me the most honey, and your subscribers will get the kind of queens I rear for my own use.

C. C. MILLER.

Several of those entitled to receive Dr. Miller queens have written us enquiring as to the cause of the delay in mailing them; and one or two have written in a most discourteous manner. Now, it seems to us that all should be willing to believe, by this time, that Dr. Miller would get those queens off at the very first possible moment. Surely, every bee-keeper who is at all acquainted with Dr. Miller would not question his honesty of purpose and effort to do exactly as he agrees, every time.

Please remember that to all will be mailed a postal card notice a day before the queens are mailed, and that they will be gotten off just as rapidly as Dr. Miller can do it, and do it well. But he can't control the weather any more successfully than other people have been able to do.

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Is as usual again on hand with his
improved strain of

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Warranted.....	\$.50	\$ 2.75	\$ 5.00
Selected warranted.....	.75	4.00	7.00
Tested.....	1.00	5.00	9.00
Selected tested.....	1.50	8.00	
Extra selected tested, the best that money can buy.....	3.00		

Address all orders to
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(Money Order Office, Bellevue, O.)

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GENERAL ITEMS

Lovely June.

BY CLARA EMILINE CONVERS.

List to the tinkle of
Bells in the dells;
Each a fond tale of love
Tenderly tells!
Come to me where I wait
Under the vine
Down by the garden gate,
Lover of mine—
Come to me, bring to me
Love's fullest measure:
Fondle me, sing to me,
O my soul's treasure!

List to the coaxing croon
Of the grave dove;
O blissful days of June,
Fragrant with love!
Come to me tenderly,
Lull me to rest;
With thy arms pinion me
Close to thy breast—
Come where I wait for thee,
Here in my bower:
Thy lips the honey bee,
My lips the flower.
—Chicago Times-Herald.

Fastening Foundation in Sections.

I meet a great many bee-keepers who dread the job of fastening foundation to sections without a great deal of trouble. To such I will try and explain the easiest and quickest way that it can be done without a press.

First roll the sections in a wet cloth or paper, say over night, as many as you want to use the next day, so they will not break in folding. Take a small piece of beeswax, or ball a piece of foundation the size of a hickorynut, and briskly rub two or three times across the upper part of the section, where you stick the foundation; rub all you intend to use that day, then cut the foundation the size you want to use; place the edge on the section where you rubbed, wet the hammer and tap the edge of the foundation lightly, and rub across the edge, and the foundation is stuck for keeps. Then fold the sections, straighten the foundation, and place in supers. With a little practice you can fold and fasten foundation in more sections than in any other way, and do it right.

CHARLES SMAIL.

Shelby Co., Ohio, June 16.

The Olive as a Honey-Yielder.

What do you think about this olive twig all over blooming? Just so looks the whole tree. And what a fragrance! It is carried for miles. But you perhaps know this Russian olive tree better than I do, so you will have noticed that the flowers appear by-and-by, and that the bees seem to be very much after them. Can you tell me whether the olive blossoms are rich in nectar or not? Are the lilies and roses also of any value to the bees?

C. H. FRIESEN.

Marion Co., Kan., May 28.

[We referred the above to Prof. Cook, who sends the following reply:—EDITOR.]

The letter from Mr. Friesen is of general interest, as there is a principle connected with his question that touches all flowers. The olive, the

The Queen Crank

Is before the readers of this Journal with a petition for orders for as fine Queens as he has ever been able to rear. They are being, and have been for some weeks, reared in triple-decker 10 frame hives, from choice Golden and Three-Band Mothers, in a Golden yard. The Bee-Keepers' Review, of Flint, Mich., for May (which is a special queen-rearing number) tells how it is done. Ask for a copy. Tested, \$1.00; untested, 75 cents. Money order office, Warren, N. C.

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We have been trying for years to secure this seed, and finally succeeded in getting it. It is new seed, gathered last season by an old personal friend of ours, so we know it is all right. But we have only a small supply. When nearly out we will mention it.

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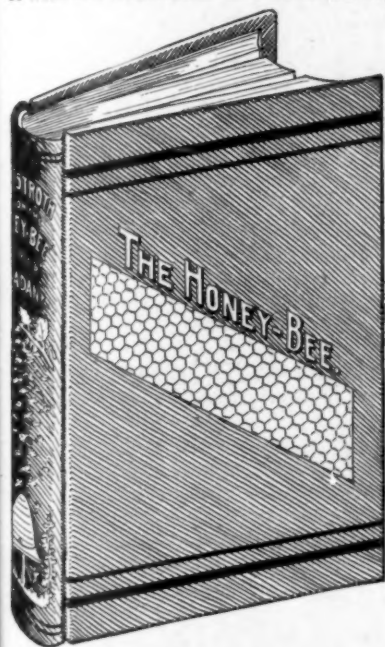
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Mission or any other variety, does furnish nectar whenever it attracts the bees. This is true of any blossom. It may be said truly that when any flower is fragrant it is almost sure to contain nectar. The color of flowers, as also their fragrance, is specially to attract bees and other nectar-loving insects, that they may pollinize the blossoms. We find that the olive in this region is a very shy bearer, and one important reason is that often only one variety was planted, and as this plant or fruit is sterile to its own pollen, it fails to fruit. I have proved by direct experiment, that the olive will not bear fully unless it is cross-pollinated. It is very important, then, that the olive be planted so as to mix varieties that blossom at the same time, and there should be honey-bees in the region to do the work of carrying the pollen from the flowers of one tree to those of another.

We should remember, then—

1st. All showy flowers are nectar-bearing.

2d. All fragrant flowers are honey-plants.

3d. Every bee-keeper is interested in all showy and all fragrant flowers, practically.

4th. In planting orchards, the fruit-grower should mix varieties, and not plant in solid blocks.

5th. As most fruit-trees require cross-pollination, and as the honey-bee is the great agent in this work, every orchardist should see to it that there is a goodly number of colonies of bees near his orchard. A. J. Cook.

Los Angeles Co., Calif., June 16.

Bees Not Doing Well.

Bees are not doing very well here, yet. They wintered well, but the spring was very unfavorable for breeding, and since the white clover blossomed the weather has been bad for the bees about half of the time.

A. W. SMITH.

Sullivan Co., N. Y., June 16.

Very Dry Weather.

It is terrible dry here. Some white clover is in blossom. We must have rain soon if we have any white honey. I had my first swarm today. The cold spring left many colonies weak.

CHAS. B. ALLEN.

Oswego Co., N. Y., June 11.

Report of Early Honey, Etc.

In a former report it had been stated that we were extracting honey on May 16, stored from the early sources, notably the poplar, maple, dandelion and fruit-bloom, all of which are too early for bees to store surplus, managed on the ordinary methods.

The artificial swarms made May 5, from which were taken off, respectively, 52, 48, 46 and 47 pounds gross, we are again (June 7), extracting the surplus stored from raspberry, and other early sources.

The queen that is now entering on her sixth year gives us 33 pounds more, which added to the 52 pounds, as reported May 16, makes 85 pounds for this particular colony. Allowing 32 pounds for supers and combs, leaves 53 pounds of extracted honey, with bees

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One Select Tested Queen 1.25
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All Queens ready to mail on receipt of the order.

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Untested, 50 cts.; 12 Untested, \$5.50; Tested, \$1.
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18Atf Please mention the Bee Journal.

enough, on May 26, to cover 48 frames—32 full-depth, and 16 half-depth frames—because on this date all the brood and eggs were out in the 16-frame nucleus.

May 28 the artificial swarms had quite a notable field-force of two-days-old bees storing honey.

The 16-frame nuclei with fine young queens and several frames of brood and eggs, and honey stored in surplus supers, are very promising.

The aforesaid queen, when 3 years younger, occupying the same kind of hive, and in the same house, managed by the ordinary methods, failed to have a field-force sufficiently strong to store surplus from the above-mentioned early sources. Whereas, by our present system, she gives us 53 pounds of extracted honey and a 16-frame nucleus with honey stored in the super by the first of June. While she is, by a few pounds of honey, ahead of other colonies, yet she is behind some in brood-rearing.

B. J. CHRYSOSTOM.
St. Joseph Co., Ind.

A Report—Alsike Clover, Etc.

My bees went thru the past winter without the loss of a single colony, but two were robbed this spring. I put them in the cellar Dec. 3, and took them out April 5; the next day they were working on soft maple bloom. They built up very fast on willow and fruit-bloom, and 2 weeks ago I found a number of covers filled with honey where the boards had been left off.

Bees all about here are strong in numbers, and if the fields produce the material the prospect is encouraging for a good crop of honey.

White clover bloom is in full blast—10 or 12 days earlier than usual—and the bees are right after it—a proof that it is yielding honey better than for 2 or 3 years; but the crop that has never

\$5.00 per month will pay for medical treatment for any reader of the American Bee Journal. This offer is good for 3 months ONLY—from May 1 to Aug. 1. Dr. Peiro makes this special offer to test the virtue of small price for best medical services. Reply AT ONCE.

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NOTE.—One reader writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one (of the buttons) as it will cause people to ask questions about the busy bee, and many a conversation thus started would wind up with the sale of more or less honey; at any rate, it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."

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No farm is well-equipped unless it has a Tool-Holder. Pays for itself in a short time.

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DIRECTIONS.—The Tool is fastened securely in the Holder by a set-screw and can be ground to any desired bevel by inserting the arm of the Holder into a higher or lower notch of the standard. While turning the crank with the right hand, the left rests on an steady the Holder; the Tool is moved to the right or left across the stone, or examined while grinding, as readily and in the same way as if held in the hands.

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failed us before in 10 years, since we began raising it, nearly all winter-killed, together with red clover, last winter. I refer to alsike clover. We raise our own seed and usually sow 10 or 12 acres every spring. It not only never fails to yield a goodly amount of honey, but, with a light mixture of timothy to hold it up, it makes the best hay for stock we ever had. There is literally no waste, the cattle consuming every vestige of it if cut in proper season.

It is usually supposed that alsike will not thrive well on dry soils, but we raise large crops on our driest land by first removing the piles of manure that accumulate about the buildings of every stock-farm to the land that needs it most, instead of removing the buildings from the manure piles.

I have been aching for years to get sweet clover started here, but have not done so on account of the undue prejudice against it by the majority of the people; still, there are plenty of farmers of my acquaintance who will allow the dirty asthma-breeding ragweed to grow and flourish along the roads bordering their farms, without a murmur, who, at sight of a little sweet clover, would raise an awful howl.

The writer of "General directions for finding the queen," on page 354, is original if nothing more. Summarized to me, it means—and nothing more—"If at first you don't succeed, try, try again." (I hope the author of "Afterthought" will not accuse me of trespassing on his ground.) A. F. FOOTE.

Mitchell Co., Iowa, June 9.

Removing Honey Early.

I never saw bees doing so well at this time of the year. I have commenced to take off supers already. I never took any off in June before. W. K. BATES.

Winona Co., Minn., June 20.



Selling Granulated Honey.—Beekeepers generally thruout the country appear to be awaking to the importance of some educational work among the masses in regard to extracted honey. There is indeed a degree of ignorance prevalent in the land regarding the nature, care and use of honey, both comb and extracted, that is amazing; but the particular point that is at present engaging the attention of the producer is that of educating the people to the use of the candied extracted article.

It is quite generally believed that granulated honey is adulterated—that the granules in the liquid are an adulterant—and the majority of retail dealers, sharing this ignorance, are incapable of rendering a true explanation to the prospective buyer, but he will instead most likely apply the force of his argument to the deliverance of his own untarnished name from the menacing stigma, laying particular stress upon his personal good faith and innocence in buying the "stuff." This will, of course, be supplemented with an apology for having offered it to his esteemed

patron. This may appear somewhat overdrawn; but we have witness just such an instance.

It does seem just a trifle strange that in 6,000 years (or 60,000, as the case may be) people have not learned that honey will granulate in cold weather, and that they are yet afraid of this most wholesome, pure and delicious food after the change has taken place.

It behooves producers of extracted honey to work earnestly to disabuse the public mind of this popular error, and to disseminate a knowledge of the ease with which honey may be restored to its liquid state when preferred in that condition. Granulated honey is very much preferred by many to that in liquid form, and some of our Western producers have so educated the trade that their goods are not looked for in any other way—indeed, their honey is not put upon the market until after it has granulated. Specific instructions for liquefying the contents goes with each retail package. In this condition there is no spilling and daubing, and the crop is marketed and retailed in the same cleanly and neat manner as an invoice of canned fruits.

The subject is one worthy of serious thought, and the expenditure of some effort on the part of those interested in the development of a permanent and profitable market for extracted honey.

—American Bee-Keeper.

Contraction and Its Effect.—The practice of using only five frames in an 8-frame brood-chamber, and filling up the space with dummies for the purpose of forcing what honey does come in into the supers, is called "contraction." This was extensively practiced a few years ago, but is now generally abandoned. It is far better to have the colonies so strong that when the first honey comes, it will be rushed right into the supers. It is better to use a full-sized brood-nest than to putter away with weak colonies with a contracted brood-nest. But if the honey-flow is short, and colonies are not overly strong, then contraction may be practiced sometimes to advantage. But in this case it will be necessary to watch closely for swarms, as contraction has quite a tendency to encourage the swarming propensity, because the bees seem to need more room for brood-rearing.—E. R. ROOT, in *Gleanings in Bee-Culture*.

Using Soiled Brood-Combs.—We had quite an experience a year ago with soiled combs from colonies having died the winter before, and very many bee-keepers are more or less troubled with such combs every year. The question then arises, "What is the best use we can make of these combs?" I have seen it recommended within a short time to give them to young swarms. In my experience I found that to be the worst use I could put them to, and that in the face of the fact that sometimes young swarms will select for their home a hive that had been previously occupied by a colony, and is filled with soiled combs of the very worst character. Many a time have I hived swarms into hives full of comb, and not very bad comb at that; but in by far the most cases the bees would not stay, and could not be made to stay, not even by caging their queen. With me the bees seem to pre-

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The A B C of Bee-Culture says of it: "This is a beautiful plant for the flower-garden, to say nothing of the honey it produces. It grows from two to three feet in height, and bears large clusters of bright pink flowers. It grows natu-



Cleome in Bloom.

ally on the Rocky Mountains, and in Colorado, where it is said to furnish large quantities of honey."

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fer to go back to their old home minus a queen; or if the queen was at liberty the whole company would respectfully bid me good-by. If one really wishes to utilize old combs for his young swarms, as good a way as I know of is to first let them go thru a cleaning process on top of a good, strong colony; and the more honey is stored in them by that colony, the better the result will be. It will nearly all be carried up into the sections, or used up some way. A young swarm hived on solid combs of honey will astonish the owner in the amount of section honey it will produce. A few soiled combs may be given to a young swarm at a time, after the same is well established in a new home, the same as is advisable in case of old colonies.

—F. GREINER, in *Gleanings in Bee-Culture*.

Releasing Queens at Night.—Mr. S. A. Dyke, of West Virginia, writes me of the excellent success he has had in releasing queens at night, when trying to introduce them. He has a cage so arranged that when the slide is withdrawn the opening to the cage is still covered with paper that is saturated with honey. The slide is withdrawn at sundown. By the time the slip of paper is eaten out it is night, and all is quiet. One advantage of releasing a queen in this way, instead of watching her as she leaves the cage, is that there is no danger of her flying away. I once liberated ten queens just at dusk, when it was so dark that a lamp was needed. They had been kept away from the bees and allowed no food for half an hour. This was according to some instructions given by some foreigner—I think it was Mr. Simmins. The whole ten queens were accepted—perhaps they might have been anyway. Whether releasing them at night had anything to do with their acceptance is hard to say. Leaving them without food for half an hour makes them hungry, and they are in a mood to accept any food that is offered them by the workers, which is one factor in their favor.—Bee-Keepers' Review.

Prevention of Drone-Comb.—The way I manage is to give new swarms which are to build comb, a brood-chamber of only about half the size of the one from which the swarm came, this smaller size being made by contracting it with dummies, while a part of the surplus for section honey is placed over the frames at the time of hiving. Some of the sections in the surplus arrangement should be partly filled with comb left over from the season previous, so as to start work in the sections at the same time the bees start below. This causes the bees to store honey above while they build comb more slowly below, building only as fast as the prolificness of the queen demands it.

As the queen's ability for laying increases, more frames are added, so that at the end of the season I have the hive filled, or very nearly so, with nice worker-comb, and secure lots of section honey. By this plan I secure three important items—much section honey, very little drone-comb, and a hive filled with nice, straight worker-comb, the latter costing less, in my estimation, than it would to buy the foundation,

wire the frames, and fit the foundation into them.—G. M. DOOLITTLE, Gleanings in Bee-Culture.

Admirable Advice to Advertisers from "Agricultural Advertising."

Nothing except the mint can make money without advertising.—Gladstone.

I would as soon think of doing business without clerks as without advertising.—John Wanamaker.

The old mediums, provided they have kept up with the times, are usually good things to stick to.—Advisor.

When you pay more for the rent of your business house than for advertising your business, you are pursuing a false policy. If you can do business, let it be known.—Franklin.

"Let people know where you are and what you have. Use more printer's ink and there will be a demand for your stock such as was never known before."—Hon. John W. Springer, president National Live-Stock Association.

Senator Chauncey Depew, in a recent interview, said that the country is at present suffering not from business stagnation or overproduction, but rather from an "indigestion of prosperity." He might have added that the pepsin of advertising is the best remedy for such indigestion.

De Weddin' Day.

BY FRED H. YAPLE.

Pick de banjo, honey—put in dem ting-a-linga—
Keep yo' fingers goin' cross de home-made strings;
For de darkies will be singin';
So keep de banjo ringin'
Like notes de little southern bluebird sings.

Pick de banjo, honey—put in dem ting-a-linga—
Beat dem feet so lively, fo' dat's de day dat brings
Back de reckoleckshuns dear—
So make de music clear—
Like notes de little southern bluebird sings.

Pick de banjo, honey, fo' de weddin' day am comin',
In de golden summer time, when all de bees am hummin';
So pick dem good and fast,
Fo' dat weddin' may be de last
Dat I'll eber hear dem lubly strings a tummin'.

So pick de banjo, honey—put in dem ting-a-linga—
When de darkies am a-dancin', den finger on dem strings,
"De Mobile Buck" an' "Watermelon Sweet"—
De' 'll hoe 'em down wid lively feet—
To de notes like de little southern bluebird sings.
—Chicago Daily News.

Texas.—The Central Texas Bee-Keepers' Association convenes in seventh annual convention, at Hutto, Tex., July 12 and 13, 1900. All are cordially invited to attend. Excursion rates, and no hotel bills to pay.
Hunter, Tex. LOUIS SCHOLL, Sec.

California! If you care to know of its Fruits, Flowers, Climate or Resources, send for a sample copy of California's Favorite Paper—

The Pacific Rural Press,

The leading Horticultural and Agricultural paper of the Pacific Coast. Published weekly, handsomely illustrated, \$2.00 per annum. Sample copy free.

PACIFIC RURAL PRESS,

330 Market Street, SAN FRANCISCO, CAL.
Please mention Bee Journal when writing.

BEE-BOOKS

SENT POSTPAID BY

George W. York & Co. 118 Mich. St. Chicago.

Bees and Honey, or Management of an Apiary for Pleasure and Profit, by Thomas G. Newman.—It is nicely illustrated, contains 160 pages, beautifully printed in the highest style of the art, and bound in cloth, gold-lettered. Price, in cloth, 75 cents; in paper, 50 cents.

Langstroth on the Honey-Bee, revised by Dadant.—This classic in bee-culture has been entirely re-written, and is fully illustrated. It treats of everything relating to bees and bee-keeping. No apiarian library is complete without this standard work by Rev. L. L. Langstroth—the Father of American Bee-Culture. It has 520 pages, bound in cloth. Price, \$1.25.

Bee-Keepers' Guide, or Manual of the Apiary, by Prof. A. J. Cook, of the Michigan Agricultural College.—This book is not only instructive and helpful as a guide in bee-keeping, but is interesting and thoroughly practical and scientific. It contains a full delineation of the anatomy and physiology of bees. 460 pages, bound in cloth and fully illustrated. Price, \$1.25.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—A method by which the very best of queen-bees are reared in perfect accord with Nature's way. Bound in cloth and illustrated. Price, \$1.00.

A B C of Bee-Culture, by A. I. Root.—A cyclopedia of 400 pages, describing everything pertaining to the care of the honey-bees. Contains 300 engravings. It was written especially for beginners. Bound in cloth. Price, \$1.20.

Advanced Bee-Culture, Its Methods and Management, by W. Z. Hutchinson.—The author of this work is a practical and entertaining writer. You should read his book; 90 pages, bound in paper, and illustrated. Price, 50 cents.

Rational Bee-Keeping, by Dr. John Dzierzon.—This is a translation of his latest German book on bee-culture. It has 350 pages, bound in paper covers, \$1.00.

Bienen-Kultur, by Theos. G. Newman.—This is a German translation of the principal portion of the book called "Bees and Honey." 100-page pamphlet. Price, 25 cents.

Bienenzucht und Honiggewinnung, nach der neuesten methode (German) by J. F. Eggers.—This book gives the latest and most approved methods of bee-keeping in an easy, comprehensive style, with illustrations to suit the subject. 50 pages, board cover. Price, 50 cents.

Bee-Keeping for Beginners, by Dr. J. P. H. Brown, of Georgia.—A practical and condensed treatise on the honey-bee, giving the best modes of management in order to secure the most profit. 110 pages, bound in paper. Price, 50 cts.

Bee-Keeping for Profit, by Dr. G. L. Tinker.—Revised and enlarged. It details the author's "new system, or how to get the largest yields of comb or extracted honey." 80 pages, illustrated. Price, 25 cents.

Apiary Register, by Thomas G. Newman.—Devotes two pages to a colony. Leather binding. Price, for 50 colonies, \$1.00; for 100 colonies, \$1.25.

Dr. Howard's Book on Foul Brood.—Gives the McEvoy Treatment and reviews the experiments of others. Price, 25 cents.

Winter Problem in Bee-Keeping, by G. R. Pierce.—Result of 25 years' experience. 30 cts.

Foul Brood Treatment, by Prof. F. R. Cheshire.—Its Cause and Prevention. Price, 10 cts.

Foul Brood, by A. R. Kohuke.—Origin, Development and Cure. Price, 10 cents.

Capons and Caponizing, by Dr. Sawyer, Fanny Field, and others.—Illustrated. All about caponizing fowls, and thus how to make the most money in poultry-raising. 64 pages. Price, 20c.

Our Poultry Doctor, or Health in the Poultry Yard and How to Cure Sick Fowls, by Fanny Field.—Everything about Poultry Diseases and their Cure. 64 pages. Price, 20 cents.

Poultry for Market and Poultry for Profit, by Fanny Field.—Tells everything about Poultry Business. 64 pages. Price, 20 cents.

ALBINO QUEENS If you want the most prolific Queens—If you want the gentlest Bees—If you want the best honey-gatherers you ever saw—try my Albinos. Untested Queens in April, \$1.00; Tested, \$1.50. 12A26t J. D. GIVENS, LISBON, TEX.

Please mention Bee Journal when writing.

HONEY AND BEESWAX

MARKET QUOTATIONS.

CHICAGO, June 19.—Not any new comb honey on the market with the exception of a little sweet clover, which, owing to the scarcity of comb honey, has sold at 15 cents. Extracted is slow of sale with 7 cents about highest price that can be obtained for white; 6½¢ for best ambers, and 5½¢ for dark grades. Beeswax, 27¢@28c. R. A. BURNETT & Co.

KANSAS CITY, June 20.—We quote: No. 1 white comb, 14¢@15c; No. 1 amber, 13¢@14c; No. 2 white and amber, 13¢@13½c. Extracted, white, 7½¢@8c; amber, 7c. No beeswax in the market.

We have a shipment of new comb honey in transit from Florida. The supply of old comb honey is very light, mostly candied.

C. C. CLEMONS & Co.

DETROIT, May 24.—Fancy white comb, 15¢@16c; No. 1, white, 14¢@15c; amber and dark, 10¢@12c. Extracted, white, 7c; amber and dark, 5¢@6c. Beeswax, 25¢@26c.

Supply and demand for honey both limited.

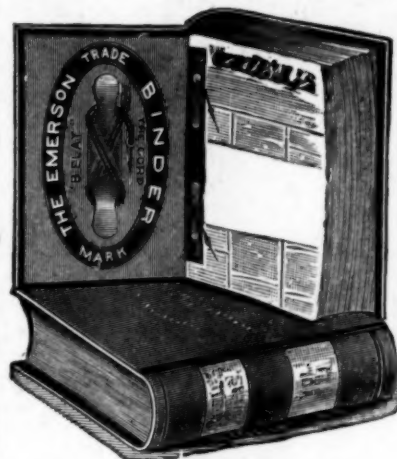
M. H. HUNT & Son.

NEW YORK, May 21.—Our market is practically bare of comb honey, and there is a good demand for white at from 13¢@15c per pound, according to quality and style of package. The market on extracted is rather quiet, and inactive. New crop is slow in coming in, and prices have not yet been established. Beeswax holds firm at 27¢@28c. HILDRETH & SEGELKEN.

SAN FRANCISCO, June 6.—White comb, 11½¢@12½c; amber, 8¢@10c. Extracted, white, 6½¢@7c; light amber, 6¢@6½c; amber, 5¢@5½c; Beeswax, 26¢@27c.

There is not much honey on market, either old or new. Small quantities of new comb and extracted are going to local trade at comparatively stiff values. In some instances, especially for comb, an advance on best figures warranted as a quotation are being realized. To secure export orders, however, of anything like wholesale proportions, prices above noted would have to be materially shaded.

The Emerson Binder



This Emerson stiff-board Binder with cloth back for the American Bee Journal we mail for but 60 cents; or we will send it with the Bee Journal for one year—both for only \$1.40. It is a fine thing to preserve the copies of the Journal as fast as they are received. If you have this "Emerson" no further binding is necessary.

GEORGE W YORK & CO.

118 Michigan Street, CHICAGO, ILL.

BEES QUEENS
Smokers, Sections,
Comb Foundation
And all Apiarian Supplies
cheap. Send for
FREE Catalogue. A. T. FLANAGAN, Belleville, Ill.

Please mention Bee Journal when writing.

We have a Large Stock on hand
and can ship promptly.

SEND US YOUR ORDERS FOR

Hives, Extractors

OR ANYTHING YOU WANT IN THE
BEE-KEEPING LINE.

WE MAKE ONLY THE BEST.

Our Falcon Sections and New Process Foundation are ahead of everything, and cost no more than other makes. New Catalog and copy of THE AMERICAN BEE-KEEPER free. Address,

THE W. T. FALGONER MFG. CO.,
JAMESTOWN, N. Y.

W. M. GERRISH, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

Please mention Bee Journal when writing.

MADE TO ORDER.

BINGHAM BRASS SMOKERS

made of sheet-brass which does not rust or burn out should last a life-time. You need one, but they cost 25 cents more than tin of the same size. The little pen cut shows our brass hinge put on the three larger sizes.

No wonder Bingham's 4-inch Smoke Engine goes without puffing and does not

DROP INKY DROPS.

The perforated steel fire-grate has 381 holes to air the fuel and support the fire.

Prices: Heavy Tin Smoke Engine, four-inch Stove, per mail, \$1.50; 3½-inch, \$1.10; three-inch, \$1.00; 2½-inch, 90 cents; two-inch, 65 cents.

BINGHAM SMOKERS

are the original, and have all the improvements, and have been the STANDARD OF EXCELLENCE for 22 years. Address,

T. F. BINGHAM,
Farwell, Mich.

I ARISE



To say to the readers of the BEE JOURNAL that

DOOLITTLE ...

has concluded to sell QUEENS in their season during 1900, at the following prices:

- 1 Untested Queen .. \$1.00
- 3 Untested Queens.. 2.25
- 1 Tested Queen 1.25
- 3 Tested Queens 3.00
- 1 select tested queen 1.50
- 3 " " Queens 4.00
- Select Tested Queen, last year's rearing 2.50
- Extra selected breeding, the very best.. 5.00

Circular free, giving particulars regarding each class of Queens, conditions, etc. Address,

G. M. DOOLITTLE,

11A26t Borodino, Onondaga Co., N. Y.

Please mention Bee Journal
when writing Advertisers.

23rd
Year

Dadant's Foundation.

23rd
Year

Why does it sell
so well?

Because it has always given better satisfaction than any other.
Because in 23 years there have not been any complaints, but thousands of compliments.



We guarantee
satisfaction.

What more can anybody do? BEAUTY,
PURITY, FIRMNESS, No SAGGING, No
LOSS.
PATENT WEED PROCESS SHEETING.

Send name for our Catalog, Samples of Foundation and Veil Material. We sell the best Veils, cotton or silk.

BEE-KEEPERS' SUPPLIES OF ALL KINDS.

Langstroth on the Honey-Bee, Revised.

The Classic in Bee-Culture—Price, \$1.25, by Mail.

Beeswax Wanted
at all times.

CHAS. DADANT & SON,

Please mention Bee Journal when writing.

Hamilton, Hancock Co., Ill.

The Novelty Pocket-Knife.

Your Name and Address on one side—Three Bees on the other side.



[THIS CUT IS THE FULL SIZE OF THE KNIFE.]

Your Name on the Knife.—When ordering, be sure to say just what name and address you wish put on the Knife.

The Novelty Knife is indeed a novelty. The novelty lies in the handle. It is made beautifully of indestructible celluloid, which is as transparent as glass. Underneath the celluloid, on one side of the handle is placed the name and residence of the subscriber, and on the other side pictures of a Queen, Drone, and Worker, as shown here.

The Material entering into this celebrated knife is of the very best quality; the blades are hand-forged out of the very finest English razor-steel, and we warrant every blade. The bolsters are made of German silver, and will never rust or corrode. The rivets are hardened German silver wire; the linings are plate brass; the back springs of Sheffield spring-steel, and the finish of the handle as described above. It will last a last-time, with proper usage.

Why Own the Novelty Knife? In case a good knife is lost, the chances are the owner will never recover it; but if the "Novelty" is lost, having name and address of owner, the finder will return it; otherwise to try to destroy the name and address, would destroy the knife. If traveling, and you meet with a serious accident, and are so fortunate as to have one of the "Novelties," your POCKET-KNIFE will serve as an identifier; and in case of death, your relatives will at once be notified of the accident.

How appropriate this knife is for a present! What more lasting memento could a mother give to a son, a wife to a husband, a sister to a brother, or a lady to a gentleman, the knife having the name of the recipient on one side?

The accompanying cut gives a faint idea, but cannot fully convey an exact representation of this beautiful knife, as the "Novelty" must be seen to be appreciated.

How to Get this Valuable Knife.—We send it postpaid for \$1.10, or give it as a Premium to the one sending us THREE NEW SUBSCRIBERS to the Bee Journal (with \$3.00.) We will club the Novelty Knife and the Bee Journal for one year, both for \$1.90.

GEORGE W. YORK & CO., 118 Mich. St., Chicago, Ill.

Please allow about two weeks for your knife order to be filled.

Marshfield Manufacturing Company.

Our specialty is making SECTIONS and they are the best in the market. Wisconsin BASSWOOD is the right kind for them. We have a full line of BEE-SUPPLIES. Write for free illustrated catalog and price-list.

MARSHFIELD MANUFACTURING CO., Marshfield, Wis.

Please mention Bee Journal when writing.